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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,324	10/16/2003	Robert Urscheler	62733C	7328

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THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,324

Applicant(s)

URSCHELER ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 34-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-31 and 34-41 in the reply filed on March 7, 2005 is acknowledged. The traversal is on the ground(s) that Group II contains only two claims limited to the product made by the process of claim 1, and thus to search Group II with Group I would not be unduly burdensome. This is not found persuasive because, as discussed in the restriction requirement of Feb. 16, 2005, the two groups of claims are distinct. Thus, when examining the claims the Examiner would have to consider each piece of art under two different standards, one for each Group. This would provide a serious burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 32-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 7, 2005.

Priority

3. Priority in the present application as to the use of EP 1249533 only extends back to 10/17/02, the filing date of 10/273,922. A review of 10/257,172 indicates that it does not teach all the features in the independent claims of the present application, and thus, priority fails.

Specification

4. The disclosure is objected to because of the following informalities: at pages 10-11, the "Brief Description of the Drawing" contains two paragraphs of lengthy description of the drawings and in the second paragraph a discussion of the invention. This material should not be placed in the "Brief Description of the Drawing" but rather in a "Detailed Description of the Invention". The Brief Description of the Drawing should be a very brief description of Figure 1.

Appropriate correction is required.

Double Patenting

5. Applicant is advised that should claim 7 be found allowable, claim 36 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 3-6 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-6 are confusing as worded. On line one of each is the phrase "characterized in that in case a" specific functionality is present, and then describes features of that functionality. However, as worded, the claim does not specifically require that functionality to be present, and therefore, if the functionality is not present, the described features are not required and the claim would not be further limiting. Applicant should clarify that the functionality must be present in these claims. For the purposes of examination, the Examiner has examined the claims as if the functionality is required to be present.

(183) Claim 39, line 2, "the interference^{ace} layer" is referred to. However, there is no antecedent
(183) basis for interference^{ace} layer in parent claim 1 and it is unclear what layer would be referred to or
(110) required by "interference^{ace} layer".

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8-31, 34, 35

10. Claims 1-5, ~~8-35~~, 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 249 533 A1 (hereinafter '533) in view of Wittosch et al (US 6458120).

Claims 1, 35, 41: '533 teaches a method of producing a coated substrate. Paragraph [0014]. The steps include forming a composite, multilayer free flowing curtain. Paragraph [0014]. The curtain comprises at least two layers. Paragraph [0014]. At least one or more layer can provide barrier properties. Paragraph [0033]. One layer can be provided with a material that provides water resistance functionality. Paragraph [0035], [0053] and [0071]—[0075]. The Cobb value when applied can be 10 g/m². Paragraph [0075] and Table 6. '533 also indicates that it is known to be desirable to provide functional coatings to provide grease proof papers and moisture resistant papers as well. Paragraph [0009]. The curtain is contacted with a continuous moving web. Figure 1 and paragraph [0039].

Claim 2: a top layer can be provided. Paragraphs [0020], [0023]. This layer can provide glass that provides printability. Paragraphs [0020]-[0021].

Claim 5: the Cobb value can be 10 g/m².

Claim 8: the coating can be applied with a lubricant. Paragraph [0026].

Claims 9-11, 41: the coatweight of the layers can be 0.5 g/m², for example. Paragraph [0034].

Claims 12-13: the coatweight of the layers can be 0.5 g/m², and thus the total coat weight can be less than 30 g/m².

Claims 14-17: 2 or more layers can be applied. Paragraph [0033].

Claim 18: at least one layer can contain a pigment. Paragraph [0020], [0022].

Claim 19: the pigment can be clay, kaolin, talc, etc. Paragraph [0022].

Claim 20: the barrier layer can include polyvinyl alcohol. Paragraph [0035].

Claim 22: the layers can include a surfactant. Paragraph [0026].

Claims 23-25, 41: the solid contents can be up to 75 wt%. Paragraph [0034].

Claim 26: the web can be base paper. Paragraph [0031].

Claims 28-30, 41: web speed can be 600 to 3200 m/min. Paragraph [0036].

Claim 34: additional adhesive layer can be applied. Paragraph [0033].

Claim 37: the curtain can be formed with a slide die. Figure 1 and paragraph [0029].

'533 teaches all the features of these claims except for (1) the combination of different layer materials, (2) the Cobb value timing, (3) the oil/grease features (claims 1, 3), (4) the water vapor transmission (claims 1, 4), (5) fold crack resistance (claim 8), (6) the number of layers (claims 14-17), (7) the components of claim 21, (8) the paper features (claim 27), (9) the web weight (claim 31), (10) the synthetic magadiite (claim 40).

However, Wittosch teaches layer materials desired to be applied as part of a multilayer coating to paper webs. The basis weight of the substrate paper can be 20 to 150 lbs/ft² (30-244 g/m²). Column 6, lines 40-50. The substrate can be uncoated paper and paperboard. Column 6, lines 40-45. Wittosch teaches that it is desired to provide grease resistant layers. Column 7, lines

30-35 and column 10, line 15 through column 11, line 35. The grease Kit value can be 11-12. column 11, lines 15-25 and column 7, lines 60-68. It is also desirable to provide water vapor barrier functionality and water resistance functionality. Column 7, lines 30-60. The water vapor transmission rate can be less than 2.38 g/100 sq.inches in a day (about 37 g/m²). Column 9, lines 10-20. The Cobb test for water resistance can be 0.99-.58 g/100 sq.inches in 30 min (about 15.9 g/m²). Column 11, lines 15-25. The layers can include polyvinyl chloride. Column 5, lines 20-30.

It is the Examiner's position that synthetic magadiite is a known pigment material for paper coating processes. If the applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '533 to further include functional layers that provide grease and/or water vapor barrier functionality and other paper features as described by Wittosch in order to provide a desirable final paper for commercial use, because '533 teaches to include one or more layers that have functional barrier properties, including moisture resistance, and also that grease resistance is desired when coating paper, and Wittosch teaches that it is desirable to provide layers that provide grease resistance and water vapor functionality when providing commercial paper. It would have been obvious to provide the different functional features in separate layers, given '533's teaching that multiple functional layers can be provided. As to the specific water vapor transmission amounts, the Cobb values, and the Kit values, '533 and Wittosch teach that these are important values to control in the area of that claimed by applicant, and one of ordinary skill in the art would perform routine experimentation to optimize the specific values of these desirable features.

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As to the fold crack resistance, it would have been obvious to provide such a feature, given the teaching of '533 to provide a lubricant in the coating, which would indicate the desire to have a flexible coating. As to the number of layers, it would have been obvious to optimize the number of layers based on the functional features desired, given the teaching of '533 to provide 2 or more layers and the number of functional layer features that are taught to be possibly provided. As to the components of claim 21, Wittosch teaches that polyvinyl chloride, for example, is a desirable ingredient in the coating layers. As to the use of non-precoated papers, Wittosch teaches the desire to coat and protect such papers. As to the web weight, Wittosch teaches the desire to coat and protect papers of such weight. As to the use of synthetic magadiite, '533 teaches the desire to use a pigmented coating, and it is well known in the art that synthetic magadiite is a pigment desirably used in paper coating, and as such would be suggested to be used in the process of '533 in view of Wittosch.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over '533 in view of

Wittosch as applied to claims 1-5, ^{8-31, 34, 35}~~8-35~~, 37 and 40 above, and further in view of WO

01/54828 A1 (hereinafter '828).

'533 in view of Wittosch teaches all the features of this claim except the provision of a layer with oxygen barrier functionality with the claimed transmission rate.

However, '828 teaches that when curtain coating multilayer curtains onto a moving paper web, a desirable functionality is to provide a layer with oxygen barrier functionality. See pages 1-4. The oxygen barrier functionality is such that oxygen transmission is desirably no more than

150 cm³/m², per 24 h (23 degrees C, 83% relative humidity) at one atm and most preferably no more than 1 cm³/m². Pages 6-7.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '533 in view of Wittosch to further include functional layers that provide oxygen barrier functionality as described by '828 in order to provide a desirable final paper for commercial use, because '533 in view of Wittosch teaches to include one or more layers that have functional barrier properties, and '828 teaches that it is desirable to provide layers that provide oxygen barrier functionality when providing commercial paper. It would have been obvious to provide the different functional features in separate layers, given '533's teaching that multiple functional layers can be provided. As to the specific oxygen transmission amounts, '828 teach that these are important values to control in the area of that claimed by applicant, and one of ordinary skill in the art would perform routine experimentation to optimize the specific values of these desirable features.

12. Claims 7 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over '533 in view of Wittosch as applied to claims 1-5, ^{8-31, 34, 35}~~8-35~~, 37 and 40 above, and further in view of Hughes (US 3508947)

'533 in view of Wittosch teaches all the features of these claims except formation of a curtain with a slot die.

However, Hughes teaches that when curtain coating, it is well known to use a slide die (figure 1) or a slot type die (figure 8) to provide the free falling curtain. Column 8, lines 10-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '533 in view of Wittosch to use a slot die as described by Hughes in order to provide a desirable final paper for commercial use, because '533 in view of Wittosch teaches to use a slide curtain coating die system, and Hughes teaches that it is desirable to curtain coat with either a slot or slide die system.

13. Claims 38, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over '533 in view of Wittosch as applied to claims 1-5, ^{8-31, 34, 35} 8-35, 37 and 40 above, and further in view of Dittman et al (US 4001024).

'533 in view of Wittosch teaches all the features of these claims except the provision of polyethylene oxide in a layer. '533 does teach the use of a surfactant in the coating layers. See paragraph [0026].

However, Dittman teaches that a well known surfactant to use when forming multilayer coating layers on slide die systems is polyethylene oxide. See column 7, lines 55-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '533 in view of Wittosch to further use a surfactant such as polyethylene oxide as described by Dittman in order to provide a desirable final paper for commercial use, because '533 in view of Wittosch teaches to include a surfactant in the layers, and Dittman teaches that a well known surfactant for multilayer coatings on slide dies is polyethylene oxide. As to the interface layer, it is unclear what is referred to, as discussed in the 35 USC 112 rejection above, but '533 indicates that surfactants can be in the various layers.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER